

REMARKS

Applicants have carefully reviewed the Office Action dated December 12, 2006, and Applicant respectfully request reconsideration of the present application in view of the following remarks.

Claims 1-11 are currently pending, with claim 1 being independent.

Claim 1 is amended.

New claims 9-11 have been added.

No new matters have been added.

Claim Rejections- 35 U.S.C. § 103

In the Action, claims 1-8 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the following references in view of U.S. Patent No. 6,355,351 to Sawada et al.: U.S. Patent No. 6,942,922 to Nishiguchi et al., U.S. Patent No. 6,734,260 to Nishiguchi et al., U.S. Patent No. 6,761,973 to Nishiguchi et al., and U.S. Patent No. 6,680,122 to Shigeo et al.

Claims 1, 2, 4-6, and 8 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,660,385 to Nishiguchi et al. in view of U.S. Patent No. 6,355,351 to Sawada et al.

Claims 1-8 were further rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over European Publication No. EP 1314768 to Shigeo et al., Japanese Publication No. JP 2003-306636 to Nishiguchi et al., Japanese Publication No. JP 2003-221547 to Nishiguchi et al., U.S. Patent No. 6,503,629 to Nishiguchi et al., U.S. Patent No. 6,492,027 to Nishiguchi et al., U.S. Publication No. 2002/0119318 to Shigeo et al., European Publication No. EP 1111013 to Shigeo et al., Japanese Publication No. JP 2002-060454 to Nishiguchi et al., and Japanese Publication no. JP 2001-279168 to Nishiguchi et al., each in view of U.S. Patent No. 6,355,351 to Sawada et al.

Finally, claims 1, 2, 4-6, and 8 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Publication No. 2002/0068172 to Nishiguchi et al. in view of U.S. Patent No. 6,355,351 to Sawada et al.

The rejection is respectfully traversed.

Claim 1, as amended, is directed to as follows:

*A coating composition used for coating of a steel material comprising:
at least two corrosion inhibitors selected from a group (i) corrosion inhibitor, a group (ii) corrosion inhibitor and a group (iii) corrosion inhibitor,
wherein the group (i) corrosion inhibitor is effective for both progress and generation of corrosion,
the group (ii) corrosion inhibitor is effective for progress of corrosion, and
the group (iii) corrosion inhibitor is effective for generation of corrosion;
further wherein, the base resin is selected from the group consisting of
(A) a base resin (I),
(B) base resin (II), ..., and
(C) a base resin (III),*

Support for these amendments can be found variously throughout the specification, including, for example, page 8, line 7 to page 9, line 10, page 9, line 16 to page 10, line 6, and page 10, line 10 to page 11, line 9. No new matter has been added.

By selecting at least two corrosion inhibitors as recited in claim 1 above, the coating composition has always two corrosion inhibitors having both effects, namely, progress inhibition and generation of corrosion inhibition.

The coating composition has an unexpected and superior effect compared to selecting one corrosion inhibitor having one effect. None of the cited references even suggest such a combination of corrosion inhibitors.

The Federal Circuit has stated that the prior art reference (or references when combined) must teach or suggest each and every claim limitation. *See, e.g., In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); *accord*. MPEP 2143.03.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 1 as amended. Specifically, none of the applied art references, either alone or in combination, teaches or suggests selecting at least two corrosion inhibitors, with the combination being effective for both progress and generation of corrosion. As a result, it is respectfully submitted that claim 1 is allowable over the applied art. Withdrawal of the rejection is respectfully requested.

Claims 2-11 depend from claim 1 and include all of the features of claim 1. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 1 is allowable as well as for the features they recite. Withdrawal of the rejection is respectfully requested.

In addition, new claims 9-11 are added. No new matter has been entered. Support for these amendments can be found variously throughout the specification for example as follows:

As to group (i), the specification of page 8, line 7 ~ page 9, line 10 recites as follows:

Corrosion inhibitors in the group (i) inhibit progress and generation of corrosion by trapping (holding) material ions (for example, Fe^{2+} , Zn^{2+} , and Al^{3+}), which have been eluted by corrosion, or corrosion promoting substances (oxygen, water and Cl^-) passing through a coating film, or by forming a stable substance (corrosion suppressing substance) with them by a chelating action.

More specifically, in the case of trapping (holding) of material ions eluted by corrosion or formation of a stabilizing substance by chelating, "the progress of corrosion" is inhibited by suppressing a phenomenon appearing after the occurrence of initial corrosion. In the case of trapping (holding) of corrosion promoting substances passing through the coating film or retardation of corrosion by chelating action, "the generation of corrosion" is inhibited by suppressing a phenomenon appearing prior to the occurrence of initial corrosion. The corrosion inhibitors in the group (i) are therefore effective for both "the progress and generation of corrosion".

For steel materials, for example, calcite type porous $CaCO_3$ ("CALIGHT KT"), "LXE-100" and "LXE-600" (each, trade name of LXE series corrosion inhibitor, product of Toagosei Co., Ltd.), 9,10-dihydro-9-oxa-10-phosphaphenanthren-10-oxide, (9,10-dihydro-9-oxa-10-phosphaphenanthren-10-oxide) zinc salt, 3,5-di(α -methylbenzyl)salicylic acid, zinc 3,5-di(α -methylbenzyl)salicylate, and ammonium metavanadate are preferred.

As to group (ii), the specification of page 9, line 16 ~ page 10, line 6 recites as follows:

Corrosion inhibitors in the group (ii) inhibit generation of corrosion by precipitating on the interface between a coated material and a coating film upon electrodeposition coating to form a stable protective film against corrosion. More specifically, it is a corrosion inhibitor having an inhibitory effect against "generation of corrosion" by inhibiting a phenomenon occurring prior to generation of initial corrosion.

For steel materials, for example, sodium molybdate, sodium dihydrogen phosphate, sodium metavanadate, magnesium molybdate, 3-amino-1,2,4-triazole, 3-mercaptop-1,2,4-triazole, 2-benzothiazolylthiopropionic acid, 2-benzothiazolylthioacetic acid, 9,10-dihydro-9-oxa-10-phosphaphenanthren-10-oxide, 3,5-di(α -methylbenzyl)salicylic acid and 2-mercaptopbenzothiazole are preferred.

As to group (iii), the specification of page 10, line 10 ~ page 11, line 9 recites as follows:

Corrosion inhibitors in the group (iii) suppress corrosion in the following manner: when initial corrosion occurs, a pH increasing site (cathode portion) or pH lowering site (anode portion) appears on the interface between the coated material and coating film. This causes elution of the corrosion inhibitor from the coating film. The corrosion inhibitor thus eluted reacts with ions (for example, Fe^{2+} , Zn^{2+} , Al^{3+}) eluted from the coated material by corrosion or corrosion promoting substances (oxygen, water, Cl^-) and forms a stable protecting film. More specifically, they are effective for the inhibition of "progress of corrosion" by suppressing a phenomenon occurring after the generation of initial corrosion.

For steel materials, for example, iron gluconate, sodium gluconate, aluminum gluconate, calcium L-ascorbyl phosphate, magnesium L-ascorbyl phosphate, ammonium metavanadate, phosphomolybdic acid, sodium tripolyphosphate, lanthanum oxide, lanthanum phosphate, cerium oxide, cerium phosphate, calcium borate, 9,10-dihydro-9-oxa-10-phosphaphenanthren-10-oxide, (9,10-dihydro-9-oxa-10-phosphaphenanthren-10-oxide) zinc salt, 3,5-di(α -methylbenzyl)salicylic acid, zinc 3,5-di(α -methylbenzyl)salicylate, sodium hexametaphosphate, magnesium hexametaphosphate and sodium hexametaphosphate are preferred.

Nonstatutory Double Patenting Rejection

Claims 1-8 are to rejected on the grounds of nonstatutory double patenting over claims 1, 16-18, 22 of Patent Number 6,942,922, which is owned by Kansai Paint Corp.; Claims 1-8 are to rejected on the grounds of nonstatutory double patenting over claims 1, 20-22, 25 of Patent Number 6,734,2602, which is owned by Kansai Paint Corp.; Claims 1-8 are to rejected on the grounds of nonstatutory double patenting over claims 1, 11, 15 of Patent Number 6,680,122, which is owned by

Kansai Paint Corp.; Claims 1, 2, 4-6, 8 are to rejected on the grounds of nonstatutory double patenting over claims 1, 24-26, 29 of Patent Number 6,660,385, which is owned by Kansai Paint Corp.; Claims 1-8 are to rejected on the grounds of nonstatutory double patenting over claims 1, 13-15, 18 of Patent Number 6,503,629, which is owned by Kansai Paint Corp.; and Claims 1-8 are to rejected on the grounds of nonstatutory double patenting over claims 1, 20, 23 of Patent Number 6,492,027, which is owned by Kansai Paint Corp.

Based on the foregoing discussion, Applicants further submit that with respect to independent claim 1, and dependent claims 2-8, the Office Action has also not established a *prima facie* case for obviousness over the references cited in the double patenting rejections. Thus, Applicants respectfully request withdrawal of the rejection of claims 1-8 under 35 U.S.C. §103, and allowance of these claims.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. KPC-0307 from which the undersigned is authorized to draw.

Dated: March 12, 2007

Respectfully submitted,

By  57,199
Tomoko Nakajima
Registration No.: L0231
RADER, FISHMAN & GRAUER PLLC
1233 20th Street, N.W.
Suite 501
Washington, DC 20036
(202) 955-3750